

DETAILED ACTION

Election/Restrictions

1. Claims 54, 61, and 63 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 6/13/11. Claim 54 has also been withdrawn from further consideration as being drawn to a nonelected species. Applicant elected species 1 directed to figure 2. Figure 2 does not show a linear actuator (A1) between the intermediate plate (2) and the base (1). Such a configuration is shown in figure 5 which is directed to a different species. Although the claim listing indicates claim 67 as being withdrawn, the election remarks list the claim as reading on species 1. Since claim 67 reads on species 1, it has not been withdrawn from consideration. Applicant is advised to amend the status identifier for claim 67.

2. Applicant's election with traverse of Species 1 in the reply filed on 6/13/11 is acknowledged. The traversal is on the ground(s) that that various species have been previously examined. This is not found persuasive because Applicant has elected species 2 and has acknowledged that it is only readable on the selected claims. The various species set forth have distinct structures that warrant an election.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 50-53, 55-60, 62, 64-66, 67, and 68 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "said damper" first recited in line 2 of claim 51 is indefinite since it is unclear to the Examiner as to which damper Applicant intends to refer to since more than one damper was previously recited. The instance set forth above is an example of such occurrence and is not intended to be exhaustive.

The phrase "said spring element" first recited in lines 3-4 from the bottom of claim 50 is indefinite since it is unclear to the Examiner as to which spring element Applicant intends to refer to since more than one spring element was previously recited. The instance set forth above is an example of such occurrence and is not intended to be exhaustive.

The remaining claims are indefinite due to their dependency from claim 50.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 50-53, 55-60, 64-67, 58, and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application 2003/0057618 to Tanner in view of US Patent 6354576 to Jacobs, EP-0391066 (EP'066), and JP-200281489 (JP'498).

Re: claims 50, 52, 53, 56-59, 64-66, 68, and 69. Tanner shows in figure 6 an apparatus for vibration isolation comprising: a device shown to the left of k_0 between a vibration-isolating table or isolated mass, m , and an intermediate plate shown between k_0 and c_1 , said device having characteristics; a spring element k_1 between said vibration-isolating table m and said base or base wall, wherein a damper c_1 is between said intermediate plate and said base, a damper C_{spring} being between said vibration-isolating table m and said base.

Jacobs teaches in figure 2 the limitation of a spring element 28 between an intermediate plate 26 and a base 18.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the vibration isolation apparatus of Tanner to have included a spring element between the intermediate plate and the base, as taught by Jacobs, in order to provide a means of helping to returning the intermediate plate to its rest position.

Tanner, as modified, is silent with regards to the elements/devices having positive or negative spring characteristics.

EP'066 teaches in lines 1-3 of the abstract the use of a vibration isolation apparatus in which the spring elements have positive spring characteristics and the magnetic springs have negative spring characteristics.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the spring characteristics of the spring elements of Tanner, as modified, to have been positive, as taught by EP'066, in order to provide a

particular means of effecting the vibration isolation depending on the application and the type of vibration to be damped.

EP'066 teaches the limitation of a magnetic actuator with zero power characteristics and negative spring characteristics and permanent magnets 6a, 6b in lines 2-4 of the abstract, but Tanner, as modified, is silent with regards to the magnetic mechanism having electromagnets.

JP'498 teaches in the English abstract the use of an actuator for supporting a vibration isolating table on an intermediate plate being in the form of a magnetic levitation mechanism with zero-power characteristics and with permanent and electromagnets.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the actuator of Tanner, as modified, to have been a magnetic levitation mechanism, as taught by JP'498, in order to provide a functionally equivalent means of supporting the vibration isolating table on the intermediate plate and achieving high vibration resistance.

Re: claim 51. Tanner, as modified, teach in figure 6 of Tanner wherein the damper c_1 is in parallel with the spring element as modified by Jacobs, the damper C_{spring} being in parallel with the spring element k_1 .

Re: claim 55. Tanner, as modified, teach in figure 6 of Tanner a spring element k_o between the vibration isolating table m and the intermediate plate as shown, the spring element k_1 being in contact with the vibration isolating table m and the intermediate plate indirectly via intervening elements as broadly recited.

Re: claim 60. With regards to the placement of the permanent magnets and electromagnets, in *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) the court held that where switching the position of elements would not have modified the operation of a device, The position of the elements is held unpatentable. Examiner maintains that whether the permanent magnets were placed opposite the electromagnets on the vibration isolating table or on the intermediate plate, it would not change the operation of the device with all other things being equal.

Re: claim 67. Tanner, as modified, teaches in figure 6 of Tanner wherein a portion of the vibration isolating table m is between the actuating device as modified and the spring element k1, a portion of the intermediate plate being between a segment of the vibration isolating table m or particularly the right side of m and the actuating device as shown and as broadly recited.

7. Claim 62 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application 2003/0057618 to Tanner in view of US Patent 6354576 to Jacobs, EP-0391066 (EP'066), and JP-200281489 (JP'498) as applied above and further in view of US Patent 4811667 to Morishita et al.

Tanner, as modified, is silent with regards to the limitation wherein the attraction of the electromagnets of the magnetic levitation mechanism is adapted to be variable with changes in the load acting on the vibration isolating table.

Morishita et al. teach in col. 5 lines 57-61 the limitation wherein the attraction of the electromagnets of the magnetic levitation mechanism is adapted to be variable with changes in the load acting on the vibration isolating table.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the attraction of the electromagnets of Tanner, as modified, to have been adapted to be variable with changes in the load acting on the vibration isolating table, as taught by Morishita et al., in order to provide a means of maintaining floating even in the midst of disturbances.

Response to Arguments

8. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELODY BURCH whose telephone number is (571)272-7114. The examiner can normally be reached on Monday-Friday (6:30 AM-3:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on 571-272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

mmb
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/Melody M. Burch/
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